

## **REMARKS/ARGUMENTS**

### **1.) Claim Amendments**

The Applicant has amended claims 10, 12, and 16; claims 11 and 18 have been canceled. Applicant respectfully submits no new matter has been added. Accordingly, claims 10 and 12-17 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

### **2.) Claim Rejections – 35 U.S.C. § 112**

The Examiner objected to Claims 11-12 under 35 U.S.C. § 112 as being indefinite for failing to comply with the enablement requirement. In response, claim 11 has been canceled. The limitations of claim 11 have been incorporated into independent claim 10. Furthermore, the limitations that were part of claim 11 have been amended and now recite the step of comparing the available memory space in the receiving node with the number of requested data units. Support for this amendment is found on page 17, lines 15-19 of the Applicant's specification. Claim 12 has been amended to depend from claim 10. Therefore, the withdrawal of the rejection and the allowance of claim 10 and 12 is respectfully requested.

### **3.) Claim Rejections – 35 U.S.C. § 103 (a)**

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art and Kaminski (US 2006/0009995 A1). The Applicant has amended claim 10 to better define the intended scope of the claimed invention. The Examiner's consideration of the amended claim is respectfully requested.

The Applicant has amended claim 10 to incorporate, with amendments, the limitations of claim 11. Claim 10 now includes the steps of: comparing the available memory space in the receiving node with the number of requested data units; and selecting the smaller one of these numbers as a potential number of granted credits from which the number of outstanding credits is subtracted in order to obtain the

number of granted credits. Support for this amendment is found on page 17, lines 15-19.

Kaminski discloses a flow control system for use in UMTS. Kaminski disclose managing access to a network resource, such as a forward access channel. Upon receiving a request from an entity, such as an RNC to use the network resource, a set of credits is allocated to the entity. Periodically, the credits that have been allocated are reviewed and revoked if they have not been used within a predefined period of time.

In contrast, the Applicant's invention provides a control method for regulating the flow of data between a first transmitting radio network node and a second transmitting radio network node in a radio transmission network. In this method, if buffer resources for storing of data units at the second transmitting radio network node are limited for a data flow between the first and second transmitting radio network node, the method includes the steps of: counting the instantaneous number of requested data units; computing the number of credits to be granted by subtracting from a target buffer filling level the number of data units currently stored in the buffer and the number of credits previously given but not yet received (outstanding credits); inserting the number of granted credits so computed in an allocation frame for transmission to the transmitting node in response to the capacity request; comparing the available memory space in the receiving node with the number of requested data units; and selecting the smaller one of these numbers as a potential number of granted credits from which the number of outstanding credits is subtracted in order to obtain the number of granted credits.

Kaminski does not teach or suggest the last two steps. Specifically, Kaminski does not teach or suggest the steps of comparing the available memory space in the receiving node with the number of requested data units or selecting the smaller one of these numbers as a potential number of granted credits from which the number of outstanding credits is subtracted in order to obtain the number of granted credits. The Applicant's invention, through these two addition steps, ensures that the allocated capacity never exceeds the requested capacity (i.e., the sending node never receives more credits than requested). Thus, underflow of the buffer is avoided (see page 11,

lines 5-8 of the Applicant's specification). Therefore, the allowance of claim 10 is respectfully requested.

Claims 13 and 15 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art, Kaminski (US 2006/0009995 A1) and Pietraski (US 2005/0100038A1). The Applicant respectfully traverses the Examiner's rejections and submits the following remarks for the Examiner's favorable reconsideration.

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. **Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations (MPEP 2143).** In that regard, the Applicant respectfully submits that the Examiner's two references in combination with the admitted prior art still fails to teach or suggest each and every element of the presently pending independent claims.

The Examiner stated on page 11 of the Office Action that "The better the channel quality is, the more likely that channel will be scheduled. In addition, a channel is scheduled when it has data buffered (Specification, page 4, lines 29-31), which means credits are distributed to it (Specification, figure 4, element 20) and its data are transmitted to the B-Node (specification, figure 4, element 21). Therefore credit distribution leads to channel scheduling". The Applicant respectfully disagrees with this characterization. Pietraski merely discloses scheduling of user equipments based on radio channel quality, as is well known in the art. The Examiner's reasoning is incorrect because there is no relation whatsoever between the credit assignment procedures and the scheduling procedures. This is clearly stated in our application (see page 5, lines 8-13 of the Applicant's specification). Data scheduling takes place at short intervals and is made dynamically, based on the instantaneous channel quality of individual UEs, while a credit assignment procedure for a given UE takes place at much longer intervals. The credit assignment procedure is not related to the channel quality of the

UE, and a channel's quality can change several times during successive credit assignments. Pietraski merely suggests scheduling UEs proportionally to the radio channel qualities.

Although it may be true in a very limited sense that credit distribution leads to channel scheduling, as if there are no credits allocated for a certain data flow, the Node B will eventually run out of data to schedule for that flow. However, assigning more credits to a data flow does not automatically result in the data flow being scheduled more often. Conversely, a higher channel quality implies that the channel is likely to be scheduled often, but does not mean that more credits will be assigned to that data flow, and, as a result, buffer underflow may occur.

The present invention provides for credits being distributed proportionally to the radio channel qualities experienced by the respective UE. The effect of this feature is that more credits are distributed to data flows which belong to users that can most likely receive large amounts of data, due to their high channel qualities. The result is a more efficient use of memory resources (see also page 13, lines 13-18 of the Applicant's specification).

Thus, the combination of Kaminski, Pietraski and the admitted prior art does not teach or suggest all the elements recited in independent claim 13. Specification, the cited references do not teach or suggest the step of distributing the total amount of credits of the receiving node proportionally to the radio channel qualities indicated by the respective user entities. Claim 15 contains limitations analogous to claim 15 and also is not taught or suggested by the cited references. Therefore, the allowance of claims 13 and 15 is respectfully requested.

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art, Kaminski (US 2006/0009995 A1), Pietraski (US 2005/0100038A1) and Pennington (US 5453982). The Applicant respectfully traverses the rejection.

As discussed above, the combination of the admitted prior art, Kaminski, and Pietraski does not teach or suggest the step of distributing the total amount of credits of the receiving node proportionally to the radio channel qualities indicated by the

respective user entities. The addition of Pennington does not make up the missing element. Furthermore, claim 14 depends from novel claim 13 and recites further limitations in combination with the novel elements of claim 13. Therefore, the allowance of claim 14 is respectfully requested.

Claims 16 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art and Shimizu (US 2005/0213595A1). In response, the Applicant has amended claim 16 to better define the intended scope of the claimed invention. The Examiner's consideration of the amended claim is respectfully requested.

Claim 16 has been amended to incorporate the limitations of claim 18. No new matter has been added. Claim 16 now recites a distribution device adapted to distribute the total number of credits given by the radio network node proportionally to the radio channel qualities indicated by the respective user entities to which the scheduler is scheduling radio transmission of data units.

In the rejection of claim 18, the Examiner used the references of the admitted prior art, Shimizu, Kaminski, and Pietraski to reject the claim. The Applicant respectfully disagrees. Amended claim 16 contains limitations analogous to claim 13. As discussed above, the admitted prior art, Kaminski and Pietraski does not teach or suggest distributing the total number of credits given by the radio network node proportionally to the radio channel qualities indicated by the respective user entities. The addition of Shimizu does not make up the missing elements.

Furthermore, the Applicant respectfully disagrees that it would have been obvious to combine Shimizu with the other cited references. Shimizu relates to a system and method for error correction in a switch. Combining the isolated feature of a counter used to perform a completely different task in Shimizu with the other cited references is not obvious and is an improper combination.

Thus, the combination of the cited references does not teach or suggest the present invention as recited in amended claim 16. Claim 17 depends from novel claim 16 and recites further limitations in combination with the novel elements of claim 16. Therefore, the allowance of claims 16 and 17 is respectfully requested.

Claim 18 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over admitted prior art, Shimizu (US 2005/0213595A1), Kaminski (US 2006/0009995 A1), and Pietraski (US 2005/0100038A1). Claim 18 has been canceled and the limitations incorporated into claim 16.

### CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

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